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Queen's University

Course in Banking

LESSONS VI-VIII

Economics

LESSON VI.

Capital and Capitalistic Production.

The complexities arising from the division of labor, and the growing use of machinery, have added to the number of stages in production and the period of time over which the whole process is spread. This involves a greater use of tools and machinery, and hence increases the importance of capital in the industrial process.

The Roundabout Process.

In the organization of industry it has been discovered that a greater result is obtained by producing goods in roundabout ways than in producing them directly. Where a good can be produced in either way, we have the fact that, by the indirect way, a greater product can be obtained by the expenditure of labor than by the direct method. But beyond this, the superiority of the indirect way manifests itself in being the only way that certain goods can be obtained. So important is the roundabout method of production that society could never abandon it and go back to the primitive form of direct production. An example will make this clear. Eugen von Boehm-Bawerk, in The Positive Theory of Capital, says:

"I am short-sighted, and wish to have a pair of spectacles. For this I require ground and polished glasses, and a steel framework. But all that nature offers toward that end is silicious earth and iron ore. How am I to transform these into spectacles? Work as I may, it is as impossible for me to make spectacles directly out of silicious earth as it would be to make the steel frames out of the iron ore. Here there is no immediate or direct method of production. There is nothing for it but to take the roundabout way, and, indeed, a very roundabout way. I must take the silicious earth and fuel, and build furnaces for smelting the glass from the silicious earth; the glass thus obtained has to be carefully purified, worked and cooled by a series of processes; finally, the glass thus prepared—again by means of ingenious instruments carefully constructed beforehand—is ground and polished into the lens fit for short-sighted eyes. Similarly, I must smelt the ore in the blast furnace, change the raw iron into steel, and make the frame therefrom—processes that cannot be carried through without a long series of tools and buildings that, on their part again, require great amounts of previous labor. Thus, by an increasingly roundabout way, the end is obtained."

Illustrations might be greatly multiplied, but the above admirably proves the point made. It would be impossible to

carry on vast industrial, financial and transportation enterprises without recourse to the roundabout method. That method has won its way because of its efficiency and the results achieved.

Increasing Use of Machinery.

The capitalistic process involves an increased use of machinery. Machinery has invaded almost every line of production, and has displaced the labor of man. This does not mean, of course, that there is less work for men to perform; on the contrary there is greater and steadier employment because of the greater productiveness of machine methods. Compare, for example, the results achieved in the making of pins under primitive and modern conditions.

In the manufacture of pins, the first operation is that of straightening the wire. This was done by a wire straightening machine in former times, as at present; but the time under the modern method is as 1 to 40 under primitive methods. Under the machine methods, in the second operation, the wire is cut and the pins headed and pointed by machines, 12 of which may be tended by one person. Under the hand method the pin was made in two parts, the head being made in the form of a coil and closed on the end of the shaft. It required seven operations to make the pin under this method, and the time required was seventy-three times as long as when done by modern machinery. Whitening the pins was accomplished by means of a whitening tank operated by hand as is done now. But to-day the process is fifteen times shorter than under the old conditions. The operation of drying and cleaning the pins is now performed by a fanning mill; formerly a drying pan was used that took twenty times as long. The pins were formerly, as now, polished in a tumbling barrel, but the time consumed is as 1 to 15.

Pin-sticking machines are used to-day to stick the pins in paper. Under the hand method this is accomplished in two operations, crimping the paper and sticking in the pins. Folding the papers, packing and labeling, require much less time under the machine than under the hand method. And finally, the power used under the two methods is enormously in favor of the capitalistic process.

> *A great change has come over machine industry in recent years—a change perhaps as far reaching in its effects as took place at the time of the Industrial Revolution. Formerly old tools were venerated and carefully preserved as long as they could be used. Now the aim is to obtain the full life-service*

in the shortest possible time, and then to consign the tool to the scrap heap. In this way tools are worn out long before they have become obsolete in design. All this is accomplished without exhausting toil on the part of the operative, for the machine has relieved him of most of the hard work. Especially is this noticeable in the handling of heavy materials. The mechanic of to-day, who is engaged in riveting a boiler or a bridge structure, no longer spends ten hours a day in striking blows with monotonous regularity, but he controls the steam or hydraulic machine, a sort of giant hand, which presses the red-hot rivet into place with a single silent squeeze of its powerful finger far more effectually than can be done by two strong men striking one hundred blows each with a riveter's hammer. This has been proved by official tests.

The Creation of Capital.

It is generally stated by economists that all capital has arisen through labor and saving. Land, on the contrary, is the gift of the Creator and its origin cannot be explained from the point of view of either labor or saving.

These propositions have been attacked in recent years by certain American economists, and particularly by Professor Davenport, of the University of Missouri. It is his contention that land, in the economic sense—land that has market value—is not different in its origin and nature from any other capital good. It must be noted carefully that his statement applies to "economic land." Land which is free is no more to be regarded as an economic good than air or sunshine—all of them useful, perhaps necessary, but in no sense economic goods.

It is maintained by Davenport and his followers, that not all capital has been created by labor. A diamond in the rough is capital—it may be stumbled upon. A water-fall which will furnish motive power is valuable, and an economic good—a capital good, and yet it has not had any labor origin. Good wine that changes into better wine, and hence more valuable wine, cannot be said to have owed the value-increase to the expenditure of labor.

Neither have these capital goods, in great part, been saved from the products of past labor. A franchise is a valuable capital good, but it is neither created by labor nor does it owe its origin to saving.

And land, on the other hand, in any true economic sense, has been created in part by labor. Swamps are drained, timber is cleared and a hundred and one processes followed before

some land has any economic value. It owes that market value to the labor expended upon it. And so, when one projects a new railway into a vast virgin territory, the land immediately acquires value. In that sense it has been economically created. Land may be denuded of its fertility, and worn out. Therefore, in a very real sense it may be said also that much land is "saved" in the same way as many capital goods.

Taking this point of view, no real economic distinction can be drawn between capital goods and economic land. Both are capital in the meaning of the definition given: "Capital is wealth held for acquisitive purposes."

Capital to the Individual and to Society.

The difference between the attitude of the individual and that of society at large to what is, and what is not, capital has been already emphasized. But further reference may be made here to make the point clear.

Stocks, bonds and securities yield an income to the owner, and are regarded by him as part of his capital. But in themselves, such securities are merely evidences of ownership or indebtedness. A stock certificate states that the holder has certain fractions of ownership in a given concrete thing or sets of things. A bond is a mere promise to pay. Bonds that are issued by corporations relate, as a rule, to some form of capitalistic enterprise. But, as the case of government securities shows, they may be the result of operations that are quite wasteful. The funds raised by their issue may be wasted on wars or upon preparations for wars. Though capital to the individual, they may or may not signify the creation or the existence of real capital.

In making a summation of a nation's wealth, therefore, evidences of indebtedness, such as bonds, may not always be counted in. Of course, securities representing Great Britain's investments in foreign countries—amounting to $17,000,000,000—may be regarded both as individual and as national wealth, as they are the source of a great individual and national income. But naturally, within the confines of a country, we can not include in the sum total of the nation's wealth, both the bonds and mortgages and also the mills, factories and lands on which these mortgages are based.

The Loan Fund.

Hitherto, in our study of capital, emphasis has been placed upon the nature of concrete capital goods. But another important division of capital—the capital which is referred to for the most part in business discussion—is that unspecialized form of capital known among economists as the "loan fund."

The loan fund is made up of the available credit of private capitalists, banks, insurance and trust and loan companies and the like. That this loan fund is not made up of concrete capital goods—materials, tools, machinery, appliances, stocks on the merchants' shelves, etc.—is quite clear. Of what, then, does this loan fund consist?

Part of the loan fund is made up of the savings of the people. Money earned as wages gives command over concrete goods to the worker, but he may elect to deny himself present gratifications in order to assure himself against possible want in the future. A part of the worker's earnings, therefore, will go as premium payments to the insurance companies; and in the aggregate these represent vast sums of unspecialized wealth the result of saving. The insurance company will, in turn, invest these funds in first class interest-bearing securities, either bonds or mortgages.

The part of the loan fund that arises through saving is readily understood; but there is also an enormous fund of capital which arises through banking transactions that plainly do not represent savings at all. The deposits in Canadian banks, for example, more than doubled during the last decade. Do these represent savings? Every banker is familiar with the fact that a very large part owes its origin to borrowing and not to saving at all. This point must be taken up later in detail, but some slight elucidation of the subject must be given here.

Where actual money—gold and Dominion notes—is deposited by a customer, it may be lent to borrowers or used as a reserve by the bank. But if we conceive of the banking system of Canada as an aggregate we know that deposits for the most part are merely transfers of credit from one branch to another or from one bank to another. The clearing system is an effective demonstration of this. Commonly the deposit liability running against a bank is the outcome of accommodation already given. The customer discounts his note or gets a line of credit; the bank makes a loan to him in the form of an immediately available purchasing power; and, as a rule, the borrower elects to take that purchasing power in the form of a deposit account, rather than in bank notes, Dominion legal tenders or gold. The capital of the customer is not increased —he has the same goods or the same securities as before the transaction. But, by means of the credit transaction, his specialized form of wealth is made available as a purchasing power which gives him command over goods in general. Capital is not increased, it is simply made more effective. Thus we may say that through saving on the one hand, and by credit transactions through the banks on the other, the loan fund

merely represents the title to concrete, tangible economic goods or to services—that is, to wealth in general, whether it be material or immaterial in form.

> *We are all familiar with the oft-repeated advice against incurring debt; and many are the homilies delivered on the virtues of saving. But one of the wealthiest men in America attributes his success to the fact that he knew how to go into debt on the right basis. He placed his savings beyond his reach, and kept in debt for the purpose of saving more. And many are the criticisms levied against the Canadian people because of their great contracted obligations and expenditures in recent years. The only point worth considering is: Have our borrowings been wisely invested? Have they been productive expenditures? To keep in the van of progress Canada must borrow in increasing amounts—not for wars or preparations for wars, but for solid growth and development.*

Canada's Borrowings from Britain.

Sir George Paish, the eminent London financier and editor of "The Statist," stated at the end of 1910 that British capital had been invested in Canada to the extent of £373,541,000—a vast sum which has been spent for the most part in opening up and developing the country. As pointed out by the same authority a new country requires to do all those things in a brief period which older countries have spent centuries in accomplishing—the building of roads, canals, harbours, railroads and countless other enterprises. All the savings of the Canadian people are absorbed at once in local enterprises, the building of houses, the breaking up of land, and the like. Our loan fund is small because our savings have been immediately invested in the private and public undertakings of the nation. We have no great fund of unspecialized capital such as the older nations—Holland, Germany, France, and notably the United Kingdom—have created out of the savings of the people. Hence we are compelled to depend upon the foreign investor for capital. Canada is, however, but one of many borrowing countries which look to Europe for their capital requirements. We have received vast sums from England, and in general at a lower rate than our competitors—not because the hard-headed English capitalist permits sentiment to affect the rate, but because Canada has offered, on the whole, better security both in its stability of government and in the enterprise and capacity of its people.

Mr. Fred. Field, editor of the "Monetary Times," makes the following analysis of the loans Canada has obtained from the United Kingdom alone during the nine years, January, 1905, to December, 1913 ("Capital Investments in Canada," p. 9):

Twenty branch plants, average capital, $300,000	$ 6,000,000
Canadian bank shares purchased by individual shareholders	2,000,000
Investments with loan and mortgage companies	12,000,000
British insurance companies' investments	30,000,000
Municipal bonds sold privately	15,000,000
Industrial investments	29,000,000
Mining investments	59,000,000
Land and lumber purchases	49,000,000
Purchases of town and city property	25,000,000
Canadian public flotations in London (January, ary, 1905, to December, 1913)	1,244,438,453
	$1,462,438,453

Large Scale Production.

Turning now from our investigation of the nature of capital and of capital goods, we may glance at the characteristic feature of modern capitalistic enterprise—namely, the organization of industry on a great scale.

Thatthe outstanding feature of industrial life to-day is the huge scale on which it is conducted scarcely requires special emphasis. That it is so is strikingly evidenced in great manufacturing nations, such as the United Kingdom, the United States and Germany; and it is exemplified also in Canada, although to a lesser extent. It should be noted, however, that large-scale production is not quite the same as carrying on industry through mergers and combines, although the two are very often confused in popular thinking. Large-scale production is very often the characteristic feature of a single concern, although great combinations, such as the United States Steel Corporation, or Canada Cottons, Limited, may appear to indicate that operation on a large scale is practised by mergers or combines alone.

The Localization of Manufacturing Industries.

The forces that are active in determining the location of industries are also, in great measure, the factors that deter-

mine the growth of an industry. These may be enumerated as follows:

1—Nearness to materials.
2—Nearness to markets.
3—Water-power.
4—A favorable climate.
5—A supply of labor.
6—Capital resources.
7—The momentum of an early start.
8—The habit of industrial imitation.
9—Economic advantage of specialized centres.

Most, if not all, of these causes of the origin and growth of an industry are familiar to all and need no special comment. The nearness to coal and iron explains the rise of great manufacturing cities such as Birmingham, Sheffield and Glasgow in the United Kingdom, and of Sydney, Lethbridge, and many other centres in Canada. The furniture factories of Berlin, Stratford and Woodstock owe their rise and development in part to the fact that they are near the greatest consuming markets of Canada. The availability of water-power gives sufficient reason for the phenomenal growth of Welland from a village to a town, and explains, too, in large measure, why those cities that can assure manufacturers a supply of cheap power are attracting factories and mills to their borders. A favorable climate for cotton and woollen manufacturing is in some degree responsible for the growth of Manchester, and the innumerable towns that cluster around that great city. An abundant supply of skilled labor and of cheap capital explains the great manufacturing development of Birmingham, Leeds, Sheffield and other English cities. The momentum of an early start is important. Although an industry may be located at a point where there are no particular natural advantages, that centre may hold its established trade and even attract more. Many Ontario towns have forged ahead in spite of their natural disadvantages, because of the momentum of an early start, and established trade connection. Oshawa has few natural advantages, and yet according to an investigation conducted by the Canadian Courier some time ago, that town has more industries, a greater output, and a larger weekly pay-roll, than any other town or city in Canada, in proportion to population. The habit of industrial imitation accounts for the locating of new mills at points where others have already met with success. The econor ic advantages of specialized centres are many. For example, in Pennsylvania, hundreds of thousands of men are at work in the iron and steel industries of Pittsburg, and other cities. This means that there will be an abundant supply of women and girl workers for the silk and other trades.

Advantage of Large-scale Production.

Chief among the advantages that large-scale production offers is the extent to which division of labor may take place. This means a greater output at a smaller cost per unit, and the greater utilization of machinery. The extent to which division of labor may be carried, when the industry is conducted on a large scale, is illustrated by the meat-packing business.

It would be difficult to find another industry where division of labor has been so microscopically worked out. The animal is surveyed and laid off like a map. The men are classified in over thirty different specialties, and twenty rates of pay, from 16 cents to 50 cents an hour. The 50 cent man is restricted to using the knife on the most delicate parts of the hide (floorman), or to using the axe on splitting the backbone (splitter); and, wherever a less skilled man can be slipped in at a lower wage a place is made for him, and an occupation mapped out. In working on the hide alone there are nine positions, at eight different rates of pay. A 20-cent man pulls off the tail; a 23-cent man pounds off another part, where the hide separates readily, and the knife of a 40-cent man cuts a different texture, and has a different "feel" from that of the 50-cent man. And so on, throughout the whole work.

There are other great advantages of large-scale production, such as a more efficient organization of the producing and selling forces, the use of machinery on a more extensive scale, the utilization of by-products, and the possibility of conducting experiments to discover newer or cheaper processes. All these indicate gains over the methods that must be adopted by the small business.

Limitations to Size of Industry.

Not all industries, of course, lend themselves to operation on a large scale. Agriculture, conspicuously, is one of them. While it is true that wheat-farming in the Canadian and American West has offered some illustrations of large-scale production, yet on the whole experience has shown that where fickle nature must be depended upon for the functioning of a business the same routine methods cannot be adopted as in manufacturing. So with work whose success depends upon the talent and capacity of workers who may be termed artists. This explains why, in part at least, France has not developed huge industrial establishments such as are to be found in Germany and England. Moreover, there is a distinct limit to the size of the mill where large-scale production may be undertaken with advantage. After a certain point is reached, the difficulties of superintendence are so great, that no advantage

is gained from increasing the scale of operation. Better results are obtained by duplicating the original plant.

Large-scale Management.

The reader should keep in mind the point that has already been emphasized—that large-scale production and large-scale management involve different considerations and problems. Large-scale management involves not so much an increase in the size of the individual establishments as the combination under single management of several establishments. It takes two forms which Professor Taussig describes as "horizontal" and "vertical."

Horizontal combination is the union under single management of a number of enterprises of the same sort. They are usually few, and each is usually on a large scale. Illustrations of such are found in Canada Cottons, Limited, and the Canada Cement Corporation, Limited.

"Vertical" combination is generally known as the integration of industries. This involves a combination of allied, but not similar, industries. The usual outcome of the division of labor has been that the several steps in production which succeed one another, have been conducted in several establishments. But in several important trades there has been a tendency of late to unite such successive stages under one management. This is seen particularly in the iron and steel industry of the United States, in the meat-packing industry, and in several others. The movement in Canada in this direction is small, and has been notable chiefly in the milling, the lumber and the steel industries.

The Trust Problem.

Once again the reader is reminded that these latter combinations are quite different in nature and degree from large-scale operation. Combinations and mergers furnish us with the "trust" problem; and so important is this phase of the movement that it will need to be described later in detail.

Questions for Review.

1. What are the main social conditions necessary to saving?
2. Do savings banks and insurance companies stimulate saving, or do they exist because of a disposition to save?
3. What influence has the formation of joint-stock companies on saving?
4. Will men save more or less if the rate of interest falls? What is the difference between hoarding and saving?

5. Are the following capital: pig iron; a plough; tobacco on the shelves of a retail dealer; a package of tobacco in the pocket of a laborer?

6. Name some employment, if you can, in which labor produces without capital.

7. The process of producing with the aid of capital has been called indirect or roundabout production. Why?

8. Are goods used by consumers capital? Are the same goods on the shelves of the merchant capital? Is a house occupied by the owner capital? Is a rented house capital?

9. What is meant by fixed capital? by circulating capital? by specialized capital?

10. Is money capital? Are stocks and bonds capital? Is a lawyer's practice capital? Is good-will capital?

11. Does capital, such as freight cars, looms, coal, etc., generally replace itself? Does it make possible its own replacement? In what sense?

12. What is meant by a "replacement fund"? What is a "depreciation charge"?

13. How is the loan fund accumulated? Why is it necessary for Canada to borrow abroad?

14. The United Kingdom had, in 1914, about $17,000,000,000 invested in foreign countries; France and Germany about $9.000,000,000 each. How do you account for Great Britain's supremacy in this field? Where are Britain's funds invested? Why has Canada paid a relatively lower rate of interest on her borrowings than Brazil and the Argentine?

15. Suppose a sugar refiner decides to go into the silk-spinning business. Can he use his old equipment in his new factory? In what sense can he withdraw his capital from one industry and invest it in another?

16. Speaking of the Galveston flood a writer said: "Fortunately, such events are not unmixed evils. Employment will now be found for many laborers." What do you think of the statement? Does the building of armaments of war increase the total field of employment within a nation?

17. Why have many people left the farm for other pursuits? Is this migration likely to continue?

18. What reasons can you assign for the fact that large-scale production is not a characteristic of agriculture? Do you think that the scale is likely to be increased in the future?

19. What connection is there between advertising and large-scale production?

20. Is large-scale production possible in all industries? Why are there relatively more large industrial establishments in the United Kingdom than in France?

Questions requiring Written Answers.

21. The following are claimed to be advantages of large-scale production: (*a*) saving of cross-freights; (*b*) running plants to full capacity; (*c*) economies in advertising; (*d*) utilization of by-products; (*e*) saving in expenses of administration; (*f*) employment of high-grade technological experts and managers; (*g*) development of foreign markets; (*h*) use of highly specialized machinery; (*i*) control of patents; (*j*) maintaining a private fire-insurance fund. Classify these advantages, showing the relation of each to (1) large-scale production, as attained in a single large plant; (2) combination, that is unified control of several plants in different localities; (3) integration of industry—that is, the uniting of consecutive processes.

22. What are the disadvantages of large-scale production with respect to (*a*) management, (*b*) labor, (*c*) the quality of the product?

23. (*a*) In what way does the increase of capital conduce to the welfare of the working classes? (*b*) In actual practice, how is the amount of invested capital kept adjusted to the growth or decline of each branch of industry? (*c*) What is meant by capital goods? by the loan fund?

24. Bring up any difficulties.

LESSON VII.

The Organization of Exchange.

It has been explained in previous lessons that the modern industrial society carries on production for exchange, and not, as in primitive times and among backward people, for local consumption. It should be noted that exchange is but a part of the productive process; for the production of a good is not complete until, through exchange, it is placed in the hands of the ultimate consumer. Exchanges are made possible by the development of money, credit, markets and means of transportation; and therefore some knowledge of these economic phenomena is necessary to understand the nature of economic activity as a whole. We may first consider the functions of money in the modern business world.

Money and the Mechanism of Exchange.

The use of money and credit is so natural in the realm of modern industry that few pause to consider the essential functions of these media of exchange. We have left in the dim and distant past old methods and measures of exchange, and can scarcely realize the remarkable process of evolution through which we have secured our modern perfected instruments of exchange. Here and there, however, there are vestiges of the methods of other days.

In the opening chapter of "Money and the Mechanism of Exchange," Jevons gives a remarkable illustration of the old practice of barter. He says:

"Some years ago, Mademoiselle Jelie, a singer of the Theatre Lyrique of Paris, made a professional tour around the world, and gave a concert in the Society Islands. In exchange for an air from Norma, and a few other songs, she was to receive a third part of the receipts. When counted, her share was found to consist of three pigs, twenty-three turkeys, forty-four chickens, five thousand cocoanuts, besides considerable quantities of bananas, lemons and oranges. At the Halle in Paris, as the prima donna remarks in her lively letter, this amount of live stock and vegetables might have brought 4,000 francs, which would have been good remuneration for five songs. In the Society Islands, however, pieces of money were scarce; and as Mademoiselle could not consume any considerable portion of the receipts herself, it became necessary to feed the pigs and poultry with the fruit.

"When Mr. Wallace was travelling in the Malay Archipelago, he seems to have suffered rather from the scarcity than the superabundance of provisions. In his most interesting

account of his travels, he tells us that in some of the islands, where there was no paper currency, he could not procure supplies for dinner without a special bargain, and much chaffering on each occasion. If the vendor of fish or other coveted eatables did not meet with the sort of exchange desired, he would pass on, and Mr. Wallace and his party had to go without their dinner. It therefore became very desirable to keep on hand a supply of articles such as knives, pieces of cloth, arrack, or sago cakes, to multiply the chance that one or other article would suit the itinerant merchant."

The Breakdown of Barter.

Barter was abandoned because of the difficulty in finding two persons whose disposable possessions mutually suited each other's wants. Recourse was had to some article of universal acceptance in the particular group in which exchanges took place. Many articles have been used by mankind for this purpose. In the Book of Job we read: "Skin for skin, yea, all that a man hath will he give in exchange for his life;" a statement that clearly implies that skins were taken as the representative of value among the various oriental nations. The Latin word for money is "pecunia," which is derived from "pecus," a herd. This also indicates that oxen and skins were used as media of exchange in the early history of the Roman race.

Innumerable articles have been adopted by different peoples at differentt periods as a money medium. Shells, iron, copper, brass, silver, gold have each had their turn. The Indians of North America used wampum as their medium of exchange. But, for obvious reasons, gold has been finally adopted by the nations as the universal means of effecting exchanges. This has come about because of its comparative stability of value—a stability which is very great as compared with other articles that have found favor as a money medium from time to time. In addition, gold has been selected because of its,

1. Portability.
2. Cognizability.
3. Divisability.
4. Homogeneity.
5. Malleability.
6. And its great power of resisting abrasion.

The Functions of Money.

Stripping the functions of money of all extraneous considerations, they may be reduced to three:

1. Money functions as a medium of exchange;
2. Money functions as a standard of value;

3. Money functions as a standard of deferred payments.

Each of these functions must be very carefully considered. The medium of exchange function is most important. All our modern business enterprise is carried on by exchange. No longer does production take place for the local market—it is world-wide in its scope. Anything that facilitates exchange, therefore, is of the highest value in the mechanism of modern business. This function money performs.

Secondly, money acts as a standard of value—a standard by means of which the exchange relations of goods are determined. We say "a standard" of value advisedly. Money does not "measure" value, as some economists declare. Value in itself merely is the ratio of exchange between goods. But by means of gold we can get at a common denominator—price—by means of which the exchange relations of goods can be determined. Thus gold acts as a standard of value.

Third, gold or money, serves as a standard of deferred payments. That is to say where contracts are made involving the time element it is necessary to find a money standard that will work substantial justice as between debtor and creditor. Obviously, a money medium that is liable to constant fluctuations in value can not be regarded as having any permanent claim to be used as the standard of value. Notwithstanding its manifest defects in this respect gold has been found to meet the ideal requirements of a perfect monetary medium better than any other metal, and has gradually displaced all other media of exchange which have been used as a standard of value. However, for present purposes it is not necessary to pursue this inquiry farther. We are here concerned with the use of money as a medium of exchange only; the various problems that arise in connection with it will be discussed more fully in the course on "Money and Banking."

The Use of Credit.

While it is admitted that money in itself is the chief means of exchange in retail trade it should not be overlooked that, for most large transactions, money has been displaced by credit.

Credit in itself is but a refined state of barter. It is a device by means of which goods are exchanged for goods—a device that has grown so familiar to all of us that we do not sufficiently realize the important rôle that is played by means of it.

When there was no division of labor the exchanging of goods and the subsequent creation of obligations were at the minimum; but the changes introduced by the modern complexities of industrial processes, by the division of labor and capi-

talistic production in general, have brought about an entirely new situation and, to a very great extent, recourse to the use of credit.

It should be noted that the function of capital has thus become increasingly important. Capital discounts the future; it bridges the operation, for example, beginning with the planting of wheat and ending with the distribution of flour to the consumer. As the economic organization of society has advanced, as the time element has become more important in processes having as their end greater productivity, capital has become more urgently necessary. In a word, capital has become more essential to modern production in proportion as the time required in the processes undergone has increased.

It is evident that hardly any modern process of production is carried on to meet immediate needs. The roundabout process of capitalistic production has proved so efficient that it has displaced production for immediate ends. But this involves the element of time—the production of goods whose sale can be effected only in the future. As a necessary result recourse is had to credit.

This is made imperative by the necessity of paying workingmen, producers of raw materials, etc., in the present. It is obvious that the laborer has, to a certain extent, contracted himself out of the risk of the particular enterprise in which he is engaged; and so with the seller of the raw materials. The entrepreneur—the organizer—on the other hand, must take risks; he must attempt in some measure to forecast the state of a future market, as he is obliged to produce for future needs and demands. Whether it is the farmer whose fields have been planted in anticipation of a future demand for wheat, or the manufacturer whose present activities can find a reward only in the future, the time element is involved. If the farmer or the manufacturer gets accommodation at the bank or elsewhere in the present it is plainly only because future goods are pledged as a security for the loan. Thus it may be said that credit is "the coining of future goods into a present means of payment." And without the use of credit most of the present industrial activities of the nation would cease. Producers are able to keep the wheels of industry revolving only by their ability, through credit, of realizing upon their future products in the early stages of production and manufacture. Goods that will come into being in a finished state only months or years in the future are made available as purchasing power in the present. It will thus be seen that credit, in last analysis, is but the putting into operation of the old barter economy—refined barter, it is true, but still barter. It makes possible the exchange of future goods for present goods. And all this means a tremendous speeding-up of the productive process. It means

the throwing of an enormous purchasing power into the hands of producers at the present time. So long as that process is confined to transactions in actual economic goods nothing but benefits can accrue from the transactions involved. It is only when purchasing power which is placed in the hands of present dealers, in the form of credit at the banks or the possession of bank notes, is not backed up by the production of goods in the future to liquidate the debts incurred, that harm is wrought. Herein lie the evils of speculation in all its forms. The speculator who simply gambles upon a rise in prices of goods or securities over which he has control but for which he has not paid in full, hopes to sell before he is called upon to pay the balance of his debts himself. If he is suddenly forced to meet his obligations, and if his borrowings at the banks or e[illegible]re have not been based on the actual production of good[illegible]st sacrifice what he has or continue the borrowing proce[illegible]ch transactions are based upon credit, to be sure, but [illegible]an abnormal form of credit, fraught with grave dang[illegible]all concerned. But this problem will be discussed in [illegible]in Lesson IX, so that further discussion is not necessar[illegible]is point.

> *Strip any credit operation whatever of its p[illegible]ing and superficial features and it will be seen [illegible] it is, in essence, a transfer of goods involvin[illegible] element of futurity, except where the reputati[illegible] persuasiveness of the borrower permits him t[illegible]t control of purchasing power by other met[illegible]ds. Even here the credit must be liquidated, in la[illegible] sort, by the sale of some economic good or the debt cannot be discharged at all.. In other words there is a limit to the borrowing process, as such. An credit, where it has not displaced the actual use of money in effecting exchanges supplements it. By means of money and credit the vast business of the modern industrial world is made possible.*

The World Market.

Most producers prepare their goods not for individual buyers but for the "market." So obvious is this that we have come to assume the existence of a market without taking time to consider just what the market means. We make goods "for the market"; we go to "market"; we "study the market"; we speak of "making a market," or "spoiling the market." Such expressions could be multiplied indefinitely, and yet very few understand just exactly what is meant by them. Let us, then, analyze somewhat more carefully what the modern market means.

Whenever we say that the price of pig iron is, for instance, twelve dollars a ton we refer to its price in a certain market and at a certain time. Between two different markets — say Pittsburg and Glasgow—there may be a difference in the price of pig iron even on the same day; while, of course, prices from one time to another may vary very widely. These discrepancies in price tend to disappear according to the world-wide demand for the commodity in question. Fruits, for example, will have as many prices as there are local markets; but wheat, iron, gold, etc., will tend to sell at the same level of price—allowing for freight charges—throughout the whole nation or the whole world.

A market exists when purchasers and sellers of a single commodity come together in such freedom of intercourse that they establish a single price at which the commodity exchanges.. From this it follows that each commodity has a separate market; and that we may speak of the iron market, the wheat market, etc., since the dealers in these commodities do not compete with each other in the establishment of a single price for each of the commodities concerned. In the next place, it is obvious that some markets will be more extensive than others. Wholesale dealers get the prices over a wide extent of territory; and they place their goods even in the most distant market if the prices secured makes it profitable so to do. Wholesale markets are, therefore, for the most part as wide as the nation; and in many cases they are international. Europe and America form almost a single market for such a commodity as wheat, since the wholesale prices of Canada and the United States respond quite quickly to changes of prices in the English market. Retail dealers, on the contrary, are generally concerned with the prices of commodities in their own neighborhood. That does not mean that they do not need to study wholesale prices; on the contrary a knowledge of the trend of wholesale prices is essential to them. But their profits depend largely upon local prices; and hence the local field is most closely studied by them. The result is that retail prices vary from one town to another, and even within certain districts of a single town, and within the section from one store to another.

> *The victories over matter attained in the last century have changed the whole bases of world relationships. Their effect has been on the one side to make the globe a unit, and on the other to intensify its separatisms. A century ago France and England, Prussia and Spain, were self-contained entities. It was possible for one to gain at the expense of the other, for its victory was co-*

pressed in the terms of territory and not of trade or economic influence.. But all that has happened since has tended to make the world, as it were, a single enterprise. You cannot have a crisis in Sofia without having a reaction in Rio. Trade is international, and the delicate system of credit binds the whole globe together in one common interest. The demand for many commodities is a world demand. A failure of the wheat harvest in the Argentine is a matter of importance to the producers of Canada and the consumers of England. And yet the new regime has made a wide gulf between the employing classes and the workers.

The Play of Competitive Forces.

The existence of a market in which the same products exchange at a single price generally means the existence of competition among buyers and sellers. In one sense, competition means the absence of restriction—the bringing together of buyers and sellers by the removal of all hindering forces or obstacles, so that the individual choices of both parties to the bargain may have free scope. From another point of view, competition means the struggle of conflicting interests, in which each man strives to get the greatest return at the least sacrifice, in the face of similar efforts on the part of his rivals. Competition may mean the efforts of rival sellers to exchange their goods for the money of buyers; and, on the other hand, the efforts of rival buyers to purchase goods at the lowest possible figure. It may also mean the process of bargaining between buyers and sellers; the one class attempting to buy as cheaply as possible while the other tries to get the highest possible prices. Where there are many buyers and sellers there is little scope for individual bargaining; and the first form of competition suffices to establish the price at which goods will sell.

Opposed to free competition are custom and customary prices. Custom may tend to raise or lower what would have been attained by a competitive struggle to fix prices. Competition may also be nullified by combinations of buyers or sellers, although this combination is generally found among the latter. Yet various "consumers' leagues" have been formed to prevent undue enhancement in prices on the one hand or to put an end to sweat-shop practices and prices on the other. The widespread protest in the United States in recent years against advancing prices has brought about various combinations of buyers, one of the best known being the formation of consumers' leagues to prevent excessive charges for food products and especially for meats of all kinds.

Transportation and Communication.

The importance of transportation, both by water and rail, as a factor in our national economic life cannot be overestimated. To say that the steel bands connecting the Pacific with the Atlantic are the great arteries of the nation by means of which its life blood circulates, is no overdrawn figure of speech. Canada as it now exists, with its vast domains and wonderful naturel resources in process of development, would be an impossibility without its great transportation system. It is generally agreed that our present civilization could not have been attained except through the division of labor; and it is equally true that the principle of the division of labor could never have been applied on other than the most meagre lines had it not been for the growth of transportation. And in studying our transportation system we must not overlook the wonderful asset we possess in our natural and artificial chain of waterways. Largely through the possession of this magnificent system of waterways has Canada's trade and commerce been developed, and Montreal been made the most important grain-shipping port on the North American continent.

Questions for Review.

1. Could we have any exchange by using barter alone? Could the exchange system be as complex as it is to-day if we depended upon barter alone? Would the productive process be as efficient?

2. Can you cite any cases of barter being used to-day? What difficulties of a system of barter are overcome by the use of money?

3. What is money? Must money have value? Has gold coin value because it is money, or is it money because it has value?

4. It has been said that the functions of money are to serve as (*a*) a medium of exchange; (*b*) a standard (common denominator) of value; (*c*) a standard of deferred payments. Explain why each of these functions is useful and cite cases where money performs each of these functions.

5. If half the money of a country were suddenly to disappear, would the wealth of the country be diminished?

6. Why is gold more stable in demand than most commodities?

7. Define credit. What is meant by book credit? drafts? promissory notes? bills of exchange?

8. Show how each of these credit devices may perform monetary functions.

9. Is credit capital? Does it really add to the sum total of economic goods, or does it merely make possible a better utilization of goods that already exist?

10. Could credit exist unless a surplus of economic goods over and above immediate needs had previously been accumulated?

11. "Credit quickens the productive process." Do you agree? If so, in what way does it do so?

12. When people congregate at a certain place and exchange goods by barter, can we say that they constitute a market?

13. Is the retail grocery store a market? For whom? Is the place the market? If not, what is?

14. Is the wholesale grocery store a market? For whom? Is the place the market? Suppose this wholesale grocery has no stock on hand but consists merely of an office, an office force, and means of communication with importers and producers and consumers, is it a market?

14. When you speak of the tea market do you mean the retailers' market? wholesalers' market? importers' market?

15. Is a stock exchange a market? Is a produce exchange? If so, for whom?

16. How has the development of transportation methods in general influenced (*a*) the scale of industry? (*b*) specialization? (*c*) distribution and concentration of population?

17. Illustrate by examples the effect of the following factors on the location of railways: (*a*) watercourses; (*b*) mountains; (*c*) climate conditions; (*d*) seaports.

18. Have Canadian railways in general followed or directed the course of settlement of the country?

19. Railway competition assumes a great variety of forms. Show how the business of a railway might be threatened by the competition of (*a*) a parallel railway line; (*b*) a roundabout railway route; (*c*) ocean navigation; (*d*) inland waterways; (*e*) rival seaports.

Questions requiring Written Answers.

20. (*a*) In what way has money facilitated the modern exchange process? (*b*) Why may it be said that credit is but "a refined state of barter"? (*c*) Why should sound credit always be based upon goods?

21. (*a*) What is the difference between the local market and the world market? (*b*) Where is the market that establishes the price of wheat? (*c*) What is the relation between

the export supply of wheat and the determination of the price of the wheat in Canada?

22. (*a*) What is meant by saying that railways are monopolies? Why should the government appoint a Commission to supervise the making of railway rates? (*c*) To what extent have the Canadian railways been responsible for the development of the country?

23. Have you any difficulties?

LESSON VIII.

Value and Price.

The Nature of Market Value.

The nature of market value has already been briefly touched upon; but for purposes of clearness of thinking, it will be necessary to consider somewhat carefully several conditions affecting the emergence of value in any commodity in the market.

In the first place it should be noted that there is a wide distinction between value in itself and utility. When it is said that a good in the economic sense is valuable, what is meant is that the good is not merely useful, but that it has also power of exchange in the market. Innumerable useful commodities possess no value—that is power of exchange—in the economic sense.

Let it be well understood that value is not inherent in a good, in the same sense that the qualities of a good are inherent to it. Value merely expresses the relation in which one good exchanges for another. This power of exchange is the essential characteristic of market value, hence we may define market value as "the ratio of exchange between one good and any other good whatsoever, quantitatively expressed." It will be thus evident that it is impossible to conceive of a general rise or fall in the level of value. On the other hand, there can be a general rise or fall in the level of prices. Price in the last analysis is nothing more or less than the ratio of exchange between a certain commodity, namely gold, and any other commodity whatsoever. It can be thus readily understood that any fact, or influence, or condition, that affects either the production or consumption of gold on the one hand, or the production or consumption of goods on the other, will affect prices. In other words the ratio of exchange of gold for goods will be altered. This is an important fact to be kept in mind in dealing with the problem of the cost of living. It indicates clearly that any factor or force that affects in any way either gold or goods will have a bearing upon the question of a rise or fall in market prices.

Relation of Utility to Value.

As has been said, utility is a necessary condition of value, but value is not at all proportional to utility. As, however, the relation between utility and value is so intimate, it is necessary to examine briefly the relation between the supply of goods and the satisfying of human wants.

In the first place, it should be noted that there is little or no cause to expect that the sum total of human wants will ever be satisfied. As the primary appetites and desires are satisfied, there arise new desires, so that the actual increase of these desires tends of itself to create further demands. By the powerful influence of habit the desire becomes a taste and the taste quickly passes into an absolute want. In addition to the primary appetites, which man shares with the inferior animals, man has also in a peculiar degree various desires which are only conceivable with reference to abstractions, and result from operations of the mind. By the aid of memory, which recalls the past, and of imagination which represents the distant, the absent and the future; and of reason, which exercises judgment upon the utility of an object, and upor the means of obtaining it, man forms desires and habits concerning himself, his family, and his property. As civilization advances, these desires are wonderfully multiplied and become more complex in nature.

Certain very obvious consequences flow from the nature of human wants. Here, in large part, is the "why" of the endless variety and increasing struggle of our modern industrial society. The following principles which apply to the satisfaction of human wants should be carefully observed: (1) Provided no change occurs in the consumer, and provided time for physical recuperation from stimuli is not permitted, any single want is capable of being sated. As added units of the desired good are consumed, a continued diminution of satisfaction per unit occurs. Sooner or later the point of satiety is reached.

This principle explains why an increase of the supply of goods on the market, with other things remaining the same, causes a decrease in prices. This decrease merely registers the diminishing utility of the good to consumers in general, through the increased supply. (2). A second important principle, with reference to the nature of demand is that the present estimation of the utility of a future good is less than the present estimation of the utility of a present good assuming no change in either the quantity or the quality of the good. If you were asked, for example, whether you would prefer to receive an ounce of gold to-day or three years hence, your decision would be to receive it to-day. There are uncertainties in life; you might not live the three years, your wants might change. Of course, if you were offered a bottle of wine, you might prefer to receive it three years hence; for, in that case, the wine would have improved with age. Notice carefully, however, that the wine would not be the same good as the one which was offered to you at the present time. The greater attraction of a present good over a future good arises only when considering a good of like kind and quality.

Notice carefully that a man's estimate of the satisfaction a good will yield is continually shifting. Advertisements, personal appeals, books—a thousand and one things, trivial or important, may change the nature of his demand. With a lapse of time, the case is even more striking. We change as a result of every factor of our environment by education, by travel, by association, even by the very process of consuming goods.

Since industry caters to wants, it follows that there will be a continual shifting in industry: and that a person engaged in supplying the means of satisfaction of wants, will assume risks and chances quite independent of climate, fire or accident. It does not surprise us, therefore, to find that men must be rewarded to induce them to incur business risks.

It is not the business of the economist to investigate the "why" of wants. This is a problem for the psychologist rather than the economist. Wants may be, and are, the result of instincts, reason, suggestion, habits and a thousand other things. Be that as it may, the significant thing for the economist is that the motivation of economic actions is to be found in wants.

> *As wants differ in kind and degree, so goods differ in their power to gratify wants. This explains in part the intensity of the desire for different goods. It should be observed, however, that the mere desire for goods does not constitute an economic demand for them. Demand is the desire for goods coupled with the power to give something in exchange.*

Relation of Supply to Value.

Some economists have attempted to prove altogether too much by the utility of a good. Some even go so far as to say that utility is the determining factor in fixing the value, or the price, of a commodity in the market. The supply, however, is just as important as the demand in explaining the value of a good. Goods may be divided into two great classes. (*a*) Non-reproducible and (*b*) reproducible goods. To the first class belong works of art, and in general all such goods as are incapable of being duplicated, whether because of natural restrictions or otherwise. In the case of this class of goods the intensity of demand largely explains the height to which values will rise. In the second class of goods, namely those goods that can be reproduced freely unless a monopoly secures control of them, their market value can not permanently rise much above their cost of production. That is to say, in the long run, the cost of production, which conditions the volume of supply has at least as much to do with determining market values as the

intensity and the extent of the demand. In other words, any force or factor or condition that affects either the demand or the supply of goods will tend to influence their market value. A full analysis must be made of the factors determining the supply, and of the factors that bear upon the demand, before any reasonable explanations can be given of market values and prices. It should be borne in mind, however, that this gives no explanation of the cause of value; it merely points to the factors that must be considered if we are to get any light on the question of why prices are as great or as small as they happen to be in the market. It yet remains for us to consider the conditions under which value arises at all, in the first place, in an economic good.

Cost of Production and Value.

We are not so much concerned, however, with the causes which give rise to market value in a good as with the forces that determine the extent of its value. In other words, it does not matter so much whether labor, for example, accounts for the value in a good as it does to understand under what conditions labor has any value at all, or what determines the extent of its value. In other words, the important aspect of the value problem is to know precisely what determines the rate of wages (the value of labor), what determines the rate of interest (the value of capital for a period of time), or what determines the rent of land (its value per annum). The great, central economic problem is to discover how the annual product of society is distributed among the several factors of production as wages, interest or rent, or whatever other form a share may assume.

The Value Causal Sequence.

Nevertheless, in order to investigate the problem of distribution intelligently, it is necessary to understand the value causal sequence. To put this in simple terms, we desire to know whether the factors of production give value to the product, or whether it is the value of the product that makes the labor, land and capital—the factors of production—valuable in the economic sense. It is obvious, if the value of a good is explained by the value of the factors that produce it—by the labor or capital involved—that we are merely explaining the emergence of value in terms of previous value. That is to say, as far as the origin of value is concerned, no light has been thrown on the problem. It is equally clear that, if we explain the value of the factors—land, labor, capital, etc.—by the value of the product produced, we are again merely explaining value in terms of itself. How, then, does value arise in the first in-

stance? The conditions under which value arises may be briefly stated as follows:

Nature has provided relatively few factors of production. If labor, land, etc., were unlimited in amount, and free as air and sunlight, it is clear that all goods would be free, because they could be produced in unlimited supplies. But the factors of production being relatively few, there are relatively few products. This, taken in conjunction with the demand for products, gives rise to the value (market value) of the products. Because products are valuable, the factors of production are in demand, and hence have market value also. It is thus clear that value emerges in the first place in the product, and is reflected, so to speak, back upon the factors that are used in the productive process. Thus, by this chain of reasoning, we do not explain the value of a commodity, in the first instance, by previously existing value. This makes it perfectly clear that the Socialists are wrong in their contention that values arise because of the labor involved in the process. The reverse is true. Labor has value because of the value of the economic good produced.

> *The niggardliness of nature furnishes us with the key to the solution of the value problem, as far as the origin of value is concerned. If productive factors—land, capital and labor—were furnished by nature in superabundance, as are air and sunlight, it is evident that goods could be produced in superfluity, and would be as free as water and sunlight. But nature furnishes mankind with relatively few productive factors, hence there are relatively few products in comparison with the demand for them. Here value emerges for the first time. It is easy to understand thereafter why the factors of production acquire value—they are essential to the creation of valuable products. All this applies to reproducible goods. Where goods are not capable of being freely reproduced, are limited in amount and satisfy a human need, value emerges at once in them. Note carefully that all this applies merely to the emergence of value. The extent of a good's value is another problem.*

All this is merely preliminary, however, to an examination of the more important problem, namely, what determines the extent of the value of a good, or a factor of production? In answering that question the level of wages, interest and rent is explained. But this brings us into the field of distribution which must be left for later treatment.

Cost of Production and Value.

As has been previously stated some economists have attewpted to find in utility both the origin of value and its extent. But the theory is not tenable. Both the demand for goods, and the supply must be carefully analysed before any working basis can be secured as to the forces that determine market values or prices.

Among these forces, bearing on the supply side, the most important is the cost of production in terms of money expenditure. When we speak of cost of production, however, it must be kept in mind that it differs with the capacity of each individual business man. One man will succeed on a large farm, another on a small. One business man will operate with success a large industry, another can make profits only with a small undertaking. It is perfectly plain that costs will differ with different men. And yet it remains true that, with industries that have been standardized such as the iron and steel, cotton, woollen and other industries, the costs of production, per unit of output, tend to approximate one another for the several men operating plants of like capacity. In these industries—monopolistic conditions aside—the value or the prices of commodities will, in the long run, tend to equal their cost of production. It must not be forgotten, however, that the forces of demand are also always operating to change the price level. Temporary changes in demand, changes of fashion, etc., may raise the level of prices, for a time; but where competition is free prices will gradually tend to equal the cost of production.

The Meaning of Cost of Production.

The meaning of "cost of production" has already been referred to; but it must be again briefly considered.

Expenditures for wages, for interest, for rent are clearly costs of production. But, although the great classical economists—Smith, Mill, Senior, and others—include in costs merely the payment for the three great productive factors, labor, land and capital, we know as a matter of fact that there are many other expenditures that a business man must make before he can put his product on the market, and all these must function as costs of production. Among these are taxes, insurance, payments for light, power, franchises, copyrights, good-will, and many others. In addition to that, a business man who is operating his own concern must receive a payment equal, at the very least, to what he could get in his next best opportunity for employment. Professor Davenport has called this "the alternative opportunity cost." It forms what may be termed the necessary share in profits. After a business man has se-

cured from the sale of his goods all the expenses of production, including the salary necessary to keep him in the business, any additional return may be called "producer's surplus," or the elastic share in profits. It may rise or fall; it may be wiped out by competition, and yet he will continue to produce the goods in question provided he gets at least as much as he could secure anywhere else. If this is borne in mind the true nature of profits become clear; the profits, as has been said, being made up of (*a*) a necessary return and (*b*) a surplus which may or may not materialize. The province, for example, might tax such a surplus heavily, even to the extent of wiping it out; and yet the entrepreneur would continue to operate his business, provided that the returns of the business are sufficient to cover the costs of operation that have been enumerated.

The Making of Market Price.

The next problem is to consider the conditions under which prices are fixed in the market under free competition. "Competition" in the economic sense means the absence of friction—the absence, that is, of monopoly conditions and other disturbing factors. Of course, it will be seen at once that there cannot be ,in the nature of things, absolutely free competition in the market—that is, conditions of buying and selling where no friction arises, where there are no obstacles to overcome. We have really two questions to consider. First, the economic condition of competitors; and second, the nature of the product or good about which competition centres.

Prices Under Free Competition.

Competition tends to reduce prices, as between competing units, to a level that can not remain below the cost of production in any standardized industry. Each competitor is concerned with the relation of his total receipts to his total outlay, and these tend to be equal. Each single, distinct economic process tends to produce value equal to its cost.

This requires that each unit of the total product should bring in enough to pay the cost for which that unit itself is responsible. It makes no difference whether one enterprise produces many things or whether the same things are produced each by a separate entrepreneur or business man. Each separate unit tends to bring such a price in the mark[illegible] will cover its cost of production—cost of production being deemed as "all the outlays that must be made to place a good upon the market."

> *It is admitted that there is no such thing as 'a' cost of production; for it is evident that different organizers or entrepreneurs will produce at differ-*

ent costs, according to the ability or capacity of each. That is why some business men make more than others. The price in the market for the goods is the same to each; but the cost of production in each case varies. The amount of producer's surplus—the difference between costs and selling price —will thus vary with the individual producer. Yet where the production of goods has become standardized — as in the cotton, boot and shoe, woollen and iron and steel, industries—the cost of production in each standard plant tends to approximate that in the others. This is what is meant when it is said that, under free competition, prices in the long run will tend to equal the cost of production. Yet it is recognized that some producers will produce more cheaply than others, and hence make additional gains.

Joint Costs and Market Price.

This is the simplest situation that may arise, but it is greatly complicated under modern methods of production. There are many industries where it is almost impossible to get at the cost of production of a unit, because it may merely be produced as part of a larger process. For example, in the meat-packing industry there must be considered the use that is made of bones, blood, bristles and hair, as well as many other by-products. It is conceivable that by-products may be sold at less than their actual cost of production, in order that some use may be made of them and that the business may profit as a whole. The same holds true with regard to the making of railway rates. It is next to impossible to get at the actual cost of carrying coal, lumber, silk, cotton, wool, spices and diamonds. It is possible that certain commodities may be carried below cost, so that cars may be operated to capacity and the business gain as a whole. Hence, it cannot be said that, in the case of "joint costs" of production that market prices or rates will equal or even tend to equal the actual cost of production in each case.

In these cases, the whole cost of operating the business must be covered; but the outlays on joint account must be arbitrarily allotted. Hence competition does not control the ascribing of reward (prices) to the various units within the business as a whole on the actual basis of the cost of producing each unit. That is, certain units may be sold below their actual cost of production, in order that the costs involved in the business as a whole may be met.

Increasing Returns.

A business carried on largely at joint cost—such as the packing industry, or the railway—is a business of "increasing return" within certain limits. If the plant has some capacity unused, it is easy to see that it is more wasteful than if there were no such unused capacity. To get the greatest efficiency possible a plant must be big enough to combine the productive factors in the best possible proportions. When this point is reached the business ceases to be one of "increasing returns" and the special motive for expansion ceases.

Cut-Throat Competition.

When plants are run to full capacity there is a tendency to cut rates to attract new customers, while the general level of prices is maintained. Sometimes goods are "dumped" into other countries—it being possible to sell part of the output at less than the cost of production because of the gain to the business as a whole from operating to full capacity. If this is done by all the competitors at once, however, it is an economic waste and leads to "cut-throat" competition. The total returns are forced below the cost level.

The Operation of Demand.

It is evident that such a condition occurs only when the capacity of the means of producing goods is greater than is justified by the demand. Goods cannot continue to sell permanently below the cost line, as it will drive certain producers out of business. The lessened supply, coupled with an increased demand at the lower price levels gradually brings prices up to the level of the cost of production. Prices in other words tend to rise as the demand expands.

While the condition of increasing returns lasts, and the tendency of cut-throat competition is strong, it is to the interest of all producers to prevent it if possible. Where the output is homogeneous, as in a flour or a woollen mill, this can be done by the "one price" principle. Under this principle each unit of a homogeneous product is charged with the same share of joint-cost outlays. While this may not be inherently logical in itself it is brought about by business necessity.

But where the product is heterogeneous, and where the business is expanded all along the line direct, active competition becomes wasteful. Prices will then be maintained by potential competition—by the menace of price-cutting if other competitors indulge in this practice.

All this may be simply stated as follows: Where joint cost is negligible each unit earns its own cost, whether the product of the business is homogeneous or heterogeneous.

Where the producer is under the law of increasing returns the temptation, in the case of a homogeneous output like flour, to indulge in cut-throat competition is restrained by the one price principle. If the output is heterogeneous—such as cotton fibre and cotton seed—active competition runs almost inevitably into cut-throat competition, bringing general prices below cost. This competition in the end tends to destroy itself.

Where the producer is working under the law of joint costs, but near maximum efficiency so that increasing returns are no longer important, the temptation to indulge cut-throat competition, whether for homogeneous or heterogeneous products, is removed. The general price-level tends to equal that of cost. The costs that each unit of output should bear is arbitrarily decided at the discretion of the entrepreneur.

> *The so-called laws of increasing returns and of decreasing returns are merely an application of the principle of the right proportioning of factors in production. For each entrepreneur, under given market conditions—that is, taking into consideration the market price of materials, labor, etc.—there is one best combination of the productive factors, which, if not followed, will result in a falling off in profits, in decreasing returns. It is evident that as a business approaches that ideal combination of factors the returns, in proportion to the outlay, increase. If the factors are not properly combined there are decreasing returns. Now if a plant is not run to full capacity it is evident that the ideal has not been reached; hence the competitive struggle for new business. That is why a railroad will rather have increased traffic at a reduced rate rather than not have it at all. Yet in a business where joint-costs obtain the total cost of production must be met by the total income.*

Monopoly Prices.

The excuse offered for the formation of mergers and combines and trade agreements is that the evils resulting from free competition are so great that recourse must be had to some form of organization that can control the output and thus make greater gains in the long run both for producers and society at large. The economic wastes involved in "cut-throat" competition are admittedly great. By way of illustration the following case may be cited.

(*Continued in next Bulletin*).